

IN THE CLAIMS:

1. (Currently Amended) A hydrodynamic bearing motor, comprising:

a base;

a hollow shaft connected to the base;

a pin located inside said shaft, rotatably supported by the shaft, the pin and shaft comprising a hydrodynamic radial bearing and a hydrodynamic thrust bearing for supporting said pin to be rotatable in a relative manner,

a sleeve connected to the pin, the sleeve and shaft comprising a hydrodynamic radial bearing for rotatably supporting the shaft pin via air, and

a driving motor connected to said pin and said shaft,

wherein a magnet for trapping abraded powder is disposed said shaft and said sleeve have a gap therebetween comprising a first passage,

said sleeve and said base have a gap therebetween comprising a second passage,

the second passage comprises a magnet for trapping abraded powder, in a connecting passage between an opening of the sleeve and an opening of the hydrodynamic bearing motor, and members forming

components forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing are made of an austenitic stainless, and

a stress between said components of at least one of the hydrodynamic thrust bearing and the hydrodynamic radial bearing is at least 300 Pa when the hydrodynamic bearing motor is in a stationary state.

2. (Previously Presented) A hydrodynamic bearing motor, comprising:

a base;
a shaft connected to the base;
a pin rotatably supported by the shaft, the pin and shaft comprising a hydrodynamic
~~radial bearing and a hydrodynamic thrust bearing to be rotatable in a relative manner,~~
a sleeve connected to the pin, the sleeve and shaft comprising a hydrodynamic radial
bearing for rotatably supporting the shaft pin via air, and
a driving motor connected to the shaft and the pin,
wherein said shaft and said sleeve have a gap therebetween comprising a first passage,
said sleeve and said base have a gap therebetween comprising a second passage,
the second passage comprises a magnet for trapping abraded powder,
~~a magnet for trapping abraded powder is disposed in a connecting passage between an~~
~~opening of the sleeve and an opening of the hydrodynamic bearing motor, and~~
one of members forming the hydrodynamic radial bearing and the hydrodynamic thrust
bearing is made of an austenitic stainless and the other member is made of a material harder than
the austenitic stainless, and
a stress between said one member comprising austenitic stainless and the other member
comprising a material harder than austenitic stainless is at least 300 Pa when the hydrodynamic
bearing motor is in a stationary state.

3. (Previously Presented) A hydrodynamic bearing motor, comprising:

a base;

a shaft connected to the base;

a pin rotatably supported by the shaft, the pin and shaft comprising a hydrodynamic radial bearing and a hydrodynamic thrust bearing to be rotatable in a relative manner,

a sleeve connected to the pin, the sleeve and shaft comprising a hydrodynamic radial bearing for rotatably supporting the shaft pin via air, and

a driving motor connected to the pin and the shaft,

wherein said shaft and said sleeve have a gap therebetween comprising a first passage,

said sleeve and said base have a gap therebetween comprising a second passage,

the second passage comprises a magnet for trapping abraded powder,

~~a magnet for trapping abraded powder is disposed in a connecting passage between an opening of the sleeve and an opening of the hydrodynamic bearing motor, and~~

one of members forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing ~~is made of~~ comprises an austenitic stainless and the other member ~~is made of~~ comprises a material almost equal in thermal expansion coefficient to the austenitic stainless, and

a stress between said one member comprising austenitic stainless and the other member comprising a material almost equal in thermal expansion coefficient to the austenitic stainless is at least 300 Pa when the hydrodynamic bearing motor is in a stationary state.

4. (Original) The hydrodynamic bearing motor according to claim 3, wherein the material almost equal in thermal expansion coefficient to the austenitic stainless is selected from a group including copper, a high copper alloy, phosphor bronze, aluminum bronze, and cupronickel.

5. (Previously Presented) The hydrodynamic bearing motor according to claim 2, wherein of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing, at least the facing surface not being made of the austenitic stainless is coated with a ceramic or a diamond like carbon.
6. (Currently Amended) The hydrodynamic bearing motor according to claim 1, wherein the magnet for trapping abraded powder has a length of at least 0.5 mm ~~or longer~~ along the ~~connecting~~ second passage, the ~~connecting~~ second passage has a width of 2.0 mm or less, and the magnet for trapping abraded powder has a surface magnetic flux density of 0.01 T or higher.
7. (Currently Amended) The hydrodynamic bearing motor according to claim 5, wherein the magnet for trapping abraded powder has a length of at least 0.5 mm ~~or longer~~ along the ~~connecting~~ second passage, the ~~connecting~~ second passage has a width of 2.0 mm or less, and the magnet for trapping abraded powder has a surface magnetic flux density of 0.01 T or higher.
8. (Withdrawn) The hydrodynamic bearing motor according to claim 1, further comprising a labyrinth seal with the magnet for trapping abraded powder in the connecting passage between the opening of the sleeve and the opening of the hydrodynamic bearing motor.

9. (Withdrawn) The hydrodynamic bearing motor according to claim 5, further comprising a labyrinth seal with the magnet for trapping abraded powder in the connecting passage between the opening of the sleeve and the opening of the hydrodynamic bearing motor.
10. (Withdrawn) The hydrodynamic bearing motor according to claim 8, wherein the magnet for trapping abraded powder has a length of 0.5 mm or longer along the connecting passage, the connecting passage has a width of 10.0 mm or less, and the magnet for trapping abraded powder has a surface magnetic flux density of 0.01 T or higher.
11. (Withdrawn) The hydrodynamic bearing motor according to claim 9, wherein the magnet for trapping abraded powder has a length of 0.5 mm or longer along the connecting passage, the connecting passage has a width of 10.0 mm or less, and the magnet for trapping abraded powder has a surface magnetic flux density of 0.01 T or higher.
12. (Previously Presented) The hydrodynamic bearing motor according to claim 1, wherein at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing has a ceramic coating.
13. (Original) The hydrodynamic bearing motor according to claim 5, wherein at least one of the facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing has a ceramic coating.

14. (Original) The hydrodynamic bearing motor according to claim 6, wherein at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing has a ceramic coating.

15. (Withdrawn) The hydrodynamic bearing motor according to claim 8, wherein at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing has a ceramic coating.

16. (Canceled)

17. (Original) The hydrodynamic bearing motor according to claim 5, wherein the ceramic of the ceramic coating is selected from a group including TiN, TiAlN, TiC, TiCN, CrN, SiC, Si₃N₄, Al₂O₃, and cBN.

18. (Previously Presented) The hydrodynamic bearing motor according to claim 1, wherein at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing is coated with a diamond like carbon.

19. (Original) The hydrodynamic bearing motor according to claim 5, wherein at least one of the facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing is coated with a diamond like carbon.

20. (Original) The hydrodynamic bearing motor according to claim 6, wherein at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing is coated with a diamond like carbon.

21. (Withdrawn) The hydrodynamic bearing motor according to claim 8, wherein at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing is coated with a diamond like carbon.

22. (Canceled)

23. (Original) The hydrodynamic bearing motor according to claim 18, wherein the diamond like carbon is selected from a group consisting of an amorphous carbon, a hydrogenated amorphous carbon, a diamond like carbon film, and a hard carbon film.

24. (Withdrawn) The hydrodynamic bearing motor according to claim 1, further comprising a lubricating film formed on at least one of the facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing.

25. (Withdrawn) The hydrodynamic bearing motor according to claim 6, further comprising a lubricating film formed on at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing.

26. (Withdrawn) The hydrodynamic bearing motor according to claim 8, further comprising a lubricating film formed on at least one of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing.
27. (Previously Presented) The hydrodynamic bearing motor according to claim 2, wherein of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing, a lubricating film is formed at least on the facing surface not being made of the austenitic stainless.
28. (Canceled)
29. (Original) The hydrodynamic bearing motor according to claim 6, wherein of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing, a lubricating film is formed at least on the facing surface not being made of the austenitic stainless.
30. (Withdrawn) The hydrodynamic bearing motor according to claim 8, wherein of facing surfaces forming the hydrodynamic radial bearing and the hydrodynamic thrust bearing, a lubricating film is formed at least on the facing surface not being made of the austenitic stainless.
31. (Withdrawn) The hydrodynamic bearing motor according to claim 25, wherein the lubricating film is selected from a group consisting of graphite, MoS₂, and PTFE.

32. (Withdrawn) The hydrodynamic bearing motor according to claim 24, wherein the lubricating film is selected from a group including graphite, MoS₂, and PTFE.

33. (Original) The hydrodynamic bearing motor according to claim 27, wherein the lubricating film is selected from a group including graphite, MoS₂, and PTFE.

34. (Previously Presented) A rotating device, wherein a rotated member such as polygon mirror and a recording disc is attached to the hydrodynamic bearing motor discussed in claim 1.